AMENDMENTS TO THE CLAIMS

1. (Previously amended) A biasing circuit for biasing a device used for amplifying a radio frequency (RF) signal, the RF signal comprising an amplitude modulated carrier having an amplitude modulation bandwidth, the biasing circuit comprising:

an active element having an input and an output, said input being coupled to a fixed direct current (DC) bias voltage source, wherein during its operation the active element maintains a relatively low output impedance over a bandwidth comparable to the amplitude modulation bandwidth; and

a resistor having an input connected to the active element output, wherein during its operation the active element maintains a fixed DC voltage at the resistor input.

2. (Original) The biasing circuit of claim 1, wherein the active element comprises an operational amplifier.

3. (Original) The biasing circuit of claim 2, wherein the operational amplifier is configured as an inverting amplifier.

4. (Original) The biasing circuit of claim 1, wherein the active element has a frequency bandwidth encompassing the amplitude modulation bandwidth of the RF signal.

5. (Original) The biasing circuit of claim 1, wherein the device is a field effect transistor having a gate, and wherein the resistor has an output connected to the transistor gate.

6. (Original) The biasing circuit of claim 5, wherein the transistor is a GaAs transistor.

7. (Previously amended) An amplifier circuit for amplifying a radio frequency (RF) signal, the RF signal comprising an amplitude modulated carrier having an amplitude modulation bandwidth, comprising:

a transistor having an input for receiving the RF signal;

a direct current (DC) bias voltage source;

a biasing circuit, the biasing circuit comprising:

an active element having an input connected to the DC bias voltage source and an output, wherein during its operation the active element maintains a relatively low output impedance over a bandwidth comparable to the amplitude modulation bandwidth of the RF signal; and

a resistor having an input connected to the active element output and an output connected to the transistor input, wherein during its operation the active element maintains a fixed DC voltage at the resistor input, regardless of voltage fluctuations of the RF signal received at the transistor.

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8. (Original) The amplifier circuit of claim 7, wherein the active element comprises an operational amplifier.

9. (Original) The amplifier circuit of claim 8, wherein the operational amplifier is configured as an inverting amplifier.

10. (Original) The amplifier circuit of claim 7, wherein the active element has a frequency bandwidth encompassing the amplitude modulation bandwidth of the RF signal.

11. (Original) The amplifier circuit of claim 7, wherein the transistor is a field effect transistor and the transistor input is a gate.

12. (Original) The amplifier circuit of claim 11, wherein the transistor is a GaAs transistor.

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13. (Previously amended) A wireless communication device comprising an amplifier circuit for amplifying a radio frequency (RF) signal, the RF signal comprising an amplitude modulated carrier having an amplitude modulation bandwidth, the amplifier circuit comprising:

a transistor having an input for receiving the RF signal;

a direct current (DC) bias voltage source;

a biasing circuit, the biasing circuit comprising:

an active element having an input connected to the DC bias voltage source and an output, wherein during its operation the active element maintains a relatively low output impedance over a bandwidth comparable to the amplitude modulation bandwidth of the RF signal; and

a resistor having an input connected to the active element output and an output connected to the transistor input, wherein during its operation the active element maintains a fixed DC voltage at the

resistor input regardless of voltage fluctuations of the RF signal received at the transistor.

14. (Original) The wireless communication device of claim 13, wherein the active element comprises an operational amplifier.

15. (Original) The wireless communication device of claim 14, wherein the operational amplifier is configured as an inverting amplifier.

16. (Original) The wireless communication device of claim 13, wherein the active element has a frequency bandwidth encompassing the amplitude modulation bandwidth of the RF signal.

17. (Original) The wireless communication device of claim 13, wherein the transistor is a field effect transistor and the transistor input is a gate.

18. (Previously amended) A gate bias circuit for biasing a gate of a field effect transistor used for amplifying a radio frequency (RF) signal, the RF signal comprising an amplitude modulated carrier having an amplitude modulation bandwidth, the gate biasing circuit comprising:

an active element having an input, an output and an operational amplifier coupled to the output of the active element, said input being coupled to a direct current (DC) bias voltage source, wherein during its operation the operational amplifier maintains a relatively low output impedance over a bandwidth comparable to the amplitude modulation bandwidth; and

a resistor having an input connected to the active element output, wherein during its operation the active element maintains a fixed DC voltage at the resistor input.

19. (Original) The gate biasing circuit of claim 18, wherein the operational amplifier is configured as an inverting amplifier.

20. (Original) The gate biasing circuit of claim 18, wherein the active element has a frequency bandwidth encompassing the amplitude modulation bandwidth of the RF signal.

21. (New) A radio frequency (RF) amplifier circuit comprising a RF device to amplify a RF signal comprising an amplitude-modulated carrier having an amplitude modulation bandwidth, and a bias circuit to bias the RF device, said bias circuit comprising:

a bias amplifier to generate a low-impedance bias signal at a bias amplifier output based on a bias reference voltage input to the bias amplifier;

a bias current-limiting resistor coupled to the bias amplifier output;

a reactive circuit having a first terminal coupled to the bias current-limiting resistor and a second terminal coupled to a bias input of the RF device, said reactive circuit configured to substantially block the RF signal from the bias circuit while simultaneously passing the bias signal from the bias circuit to the RF device; and

wherein the bias amplifier is selected to have an output signal bandwidth such that it sources and sinks current as needed to maintain a fixed bias voltage at the bias amplifier output even in the presence of signal

disturbances feeding back from the bias input of the RF device that are not blocked by the reactive circuit.

22. (New) The RF amplifier circuit of claim 21, wherein the RF device comprises a field-effect transistor (FET) device and the bias input comprises a gate input of the FET device to which the RF signal is applied, and wherein the signal disturbances arise from unwanted demodulation of the amplitude-modulated carrier by the FET device.

23. (New) The RF amplifier circuit of claim 22, wherein the gate input is ac-coupled to the RF signal via an input capacitor and low-pass coupled to the bias amplifier via the reactive circuit.

24. (New) The RF amplifier circuit of claim 21, wherein the RF device comprises a GaAs FET operated as a common-source amplifier, and wherein the bias current-limiting resistor is sized to limit gate current of the GaAs FET to a desired maximum value.

25. (New) The RF amplifier circuit of claim 21, wherein the bias amplifier comprises an operational amplifier configured as a non-inverting amplifier having a desired gain relative to the bias reference voltage.

26. (New) The RF amplifier circuit of claim 21, wherein the bias amplifier comprises an operational amplifier configured as an inverting amplifier having a desired gain relative to the bias reference voltage.

27. (New) The RF amplifier circuit of claim 21, wherein the bias amplifier comprises an operational amplifier configured as a buffer amplifier to provide a low-impedance voltage source at the bias reference voltage.

28. (New) The RF amplifier circuit of claim 21, wherein the reactive circuit comprises a 1/4 wavelength stub with respect to the RF signal input to the RF device.

29. (New) The RF amplifier circuit of claim 21, wherein the reactive circuit comprises a low-pass filter (LPF) circuit that includes an inductor in series with the bias current-limiting resistor and a shunt capacitor having a first terminal coupled to a node connecting the bias current-limiting resistor to the inductor and a second terminal coupled to a signal ground connection.

30. (New) The RF amplifier circuit of claim 29, wherein the inductor comprises a RF choke.

31. (New) A method of amplifying a RF signal that comprises an amplitude-modulated carrier having an amplitude modulation bandwidth using a RF device biased by a biasing circuit, the method comprising:

generating a low-impedance bias signal using a bias amplifier;

coupling the bias signal to a bias input of the RF device via a bias current-limiting resistor and a reactive circuit;

configuring the reactive circuit to substantially block the RF signal from feeding back into the bias circuit; and

maintaining a fixed bias voltage at an output of the bias amplifier by selecting the bias amplifier to have a low output impedance with respect to signal

disturbances not blocked by the reactive circuit such that the bias amplifier sources and sinks current as needed to maintain the fixed bias voltage at its output.

32. (New) The method of claim 31, further comprising implementing the reactive circuit as a 1/4 wavelength stub relative to a carrier frequency of the RF signal being amplified.

33. (New) The method of claim 31, further comprising implementing the reactive circuit as a low-pass filter (LPF) circuit comprising an inductor coupled in series with the bias current-limiting resistor and a shunt capacitor having a first terminal coupled to a node interconnecting the inductor and the bias current-limiting resistor and a second terminal coupled to a signal ground connection.

34. (New) The method of claim 33, wherein the inductor comprises a RF choke.

35. (New) The method of claim 31, wherein the device comprises a GaAs FET, and wherein selecting the bias amplifier to have a low output impedance with respect to signal disturbances not blocked by the reactive circuit comprises selecting an operational amplifier having a signal bandwidth approaching the amplitude modulation bandwidth of the RF signal.